



Rail safety statistics

QUARTERLY STATISTICS FOR THE PERIOD ENDED 31 DECEMBER 2010

Prepared by Research and Statistics, Ministry of Transport

Quarterly Statistical
Statement of Rail
Incidents
December 2010

Quarterly Statistical Statement of Rail Incidents from rail incident reports provided by KiwiRail. These reports cover a wide range of incidents including near misses. Only a relatively small number of reported incidents result in injury. The less serious incidents and near misses are useful for identifying potential safety issues.

Key points

This quarter there have been:

359	reported incidents, resulting in
3	Deaths
5	injuries
0	deaths in level crossing incidents
2	injuries in level crossing incidents
3	deaths in person on track incidents
0	injuries in person on track incidents
0	deaths in operating incidents
3	injuries in operating incidents

In the last 12 months there have been:

1476	reported incidents, resulting in
10	deaths
48	injuries
1	death in level crossing incidents
10	injuries in level crossing incidents
9	deaths in person on track incidents
1	injury in person on track incidents
0	deaths in operating incidents
31	injuries in operating incidents

Note that rail incident deaths can include suicides.

NOTES:

- The Rail Incident database was initiated during 1993 to collate information about rail incidents. Previously the only rail incident data collected at a national level was for level crossing motor vehicle crashes attended by the Police.
- These reports are provided to the MOT by KiwiRail, usually within 72 hours of the incident or when enough information has been compiled.
- Caution should be exercised in interpreting the statistics in this report in the light of the size of the numbers and the short time periods involved.

Rail incidents in New Zealand reported by rail operators

Rail incidents

General category incident type	Oct to Dec 2009	Oct to Dec 2010	Last 12 months
Collisions (between rail vehicles)	4	8	29
Derailments (of rail vehicles)	88	84	288
Fires (on trains/by track)	21	17	49
Level crossing incidents	41	48	176
Obstruction incidents	74	33	193
Operating incidents	78	125	498
Person on track incidents	45	21	94
Shunting incidents	6	3	20
Vandalism incidents	55	19	119
Other incidents	9	1	10
Total number of incidents	421	359	1476

Casualties from rail incidents

General category incident type	Oct to Dec 2009			Oct to Dec 2010			Last 12 months		
	Deaths	Serious injuries	Minor injuries	Deaths	Serious injuries	Minor injuries	Deaths	Serious injuries	Minor injuries
Collisions (between rail vehicles)	-	-	-	-	-	-	-	-	5
Derailments (of rail vehicles)	-	-	-	-	-	-	-	-	-
Fires (on trains/by track)	-	-	-	-	-	-	-	-	1
Level crossing incidents	-	-	2	-	1	1	1	2	8
Obstruction incidents	-	-	-	-	-	-	-	-	-
Operating incidents	-	-	3	-	1	2	-	4	27
Person on track incidents	2	1	-	3	-	-	9	1	-
Shunting incidents	-	1	-	-	-	-	-	-	-
Vandalism incidents	-	-	2	-	-	-	-	-	-
Other incidents	-	-	3	-	-	-	-	-	-
Total number of casualties	2	2	10	3	2	3	10	7	41

Rail incidents by local government region

Local govt region	Oct to Dec2009	Oct to Dec2010	Last 12 months
Northland	5	6	30
Auckland	99	72	330
Waikato	46	32	153
Bay of Plenty	26	13	68
Gisborne	1	2	6
Hawke's Bay	10	10	34
Taranaki	15	9	39
Manawatu-Wanganui	44	43	155
Wellington	56	76	278
Nelson-Marlborough	15	11	35
West Coast	13	17	64
Canterbury	61	47	191
Otago	20	13	58
Southland	10	8	35
Total number of incidents	421	359	1476

Note: total includes unknowns so region data may not add to column total.

Level crossing incidents

Definition: Incidents that occur at a level crossing (public or private) involving a motor vehicle, a pedestrian or a pedal cyclist. Incident reports can give information about the type of protection present at the level crossing.

Number of level crossing incidents

Incident type	Oct to Dec2009	Oct to Dec2010	Last 12 months
Level crossing incidents – collision with motor vehicle	9	5	31
Level crossing incidents – NEAR collision with motor vehicle	27	38	127
Level crossing incidents – collision involving a pedestrian or pedal cyclist	2	0	9
Level crossing incidents – NEAR collision involving a pedestrian or pedal cyclist	3	4	7
Level crossing incidents – other	0	1	2
TOTAL	41	48	176

Type of protection present and working for level crossing incidents

Protection type	Oct to Dec2009		Oct to Dec2010		Last 12 months	
	Present	Working	Present	Working	Present	Working
Flashing lights & bells (FLB)	7	7	3	3	36	36
Half arm barriers with lights and bells (HAB)	10	7	11	11	38	37
Stop signs/St Andrews signs	2	2	3	3	15	15
TOTAL	19	16	17	17	89	88
None/not known	22	-	31	-	87	-

Type of protection present and working for level crossing collision with motor vehicle incidents

Protection type	Oct to Dec2009		Oct to Dec2010		Last 12 months	
	Present	Working	Present	Working	Present	Working
Flashing lights & bells (FLB)	0	0	1	1	2	2
Half arm barriers with lights and bells (HAB)	0	0	0	0	3	3
Stop signs/St Andrews signs	1	1	1	1	8	8
TOTAL	1	1	2	2	13	13
None/not known	8	-	3	-	18	-

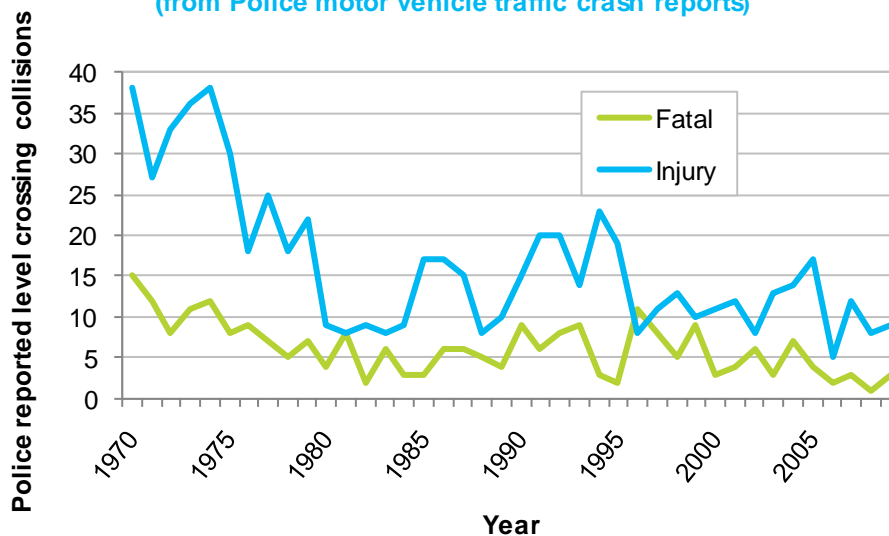
Crashes and casualties for level crossing collisions with motor vehicles (Crash Analysis System) ⁽¹⁾

Data derived from Police traffic crash reports of collisions with motor vehicles at level crossings.

Year	Crashes		Casualties		
	Total	Fatal	Deaths	Serious injuries	Minor injuries
2000	14	3	4	7	8
2001	16	4	4	0	18
2002	14	6	6	4	7
2003	16	3	3	10	7
2004	21	7	8	7	11
2005	21	4	4	8	14
2006	7	2	2	6	1
2007	15	3	5	6	13
2008	10	1	1	5	8
2009	12	3	4	8	6

Level crossing collisions by crash severity (1970–2009)

(from Police motor vehicle traffic crash reports)



Note: Pre–1980 data are derived from historical records.

(1) The Crash Analysis System (CAS) is a web-based tool available to registered users that manages, analyses and maps traffic crash and related data, largely based on Police traffic crash reports (TCR) forwarded to the NZ Transport Agency (NZTA).

Obstruction incidents

Definition: Incidents where an object obstructing the rail corridor has been struck by a train or nearly been struck by a train. This excludes level crossing collisions.

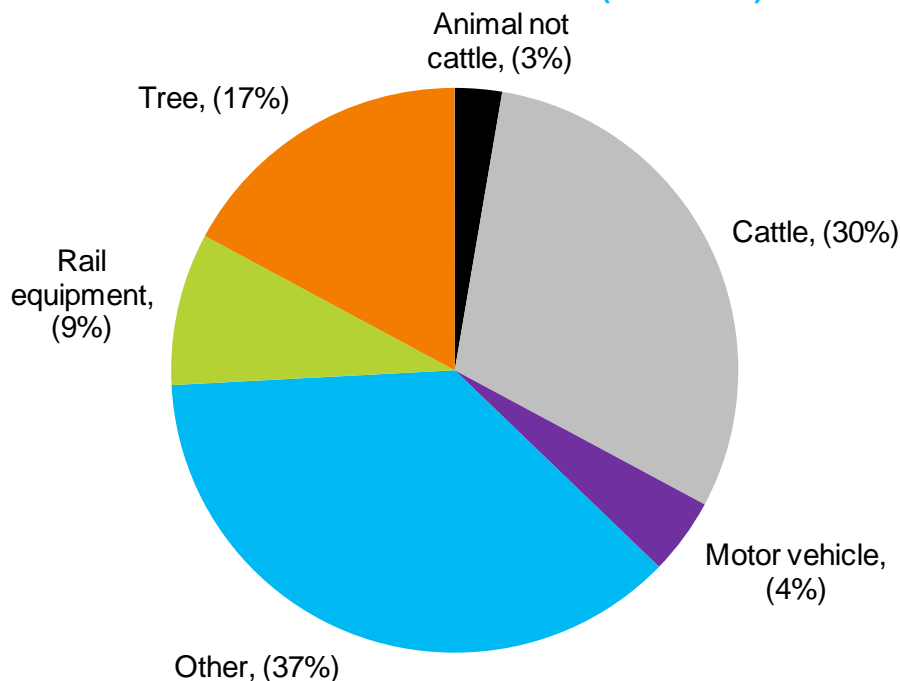
Overall there were 210 obstruction incidents recorded for the last 12 months, with 30 of these being near collisions.

Obstruction 'collision with object' incidents by type of object struck

Type of object struck	Oct to Dec2009	Oct to Dec2010	Last 12 months
Animal not cattle	3	0	2
Cattle	15	7	36
Motor vehicle	6	0	7
Rail equipment	9	3	18
Tree	9	3	27
Other	26	10	48
TOTAL	68	23	138

Note: Total will include unknown objects

Type of object struck by a train by percentage of reported obstruction – collision incidents (2008–2010)



Note: percentages have been rounded and may not add up to 100%

Person on track incidents

Definition: Incidents where a person on track (defined as being on or obstructing the rail corridor NOT at a level crossing) has been struck by a train, nearly struck by a train or observed to be present without a train being in the vicinity. These incidents relate to members of the public trespassing in the rail corridor and can include suicides. Rail operator staff or contractors are included in the “Operating incidents” category.

Number of incidents

Incident type	Oct to Dec2009	Oct to Dec2010	Last 12 months
Person on track – collision incidents	3	3	12
Person on track – near collision incidents	39	15	73
Person on track – other incidents	3	3	9
TOTAL	45	21	94

Historical time series of reported casualties by calendar year for person on track-collisions

Year	Deaths	Serious injuries	Minor injuries
2000	17	2	1
2001	11	2	3
2002	10	5	2
2003	14	5	3
2004	5	0	1
2005	9	0	1
2006	14	7	1
2007	3	6	1
2008	7	3	1
2009	7	2	1
2010	9	1	-

Vandalism incidents

Definition: Incidents where an object has been thrown at a train, an object has been deliberately placed on the track, or rail property has been altered deliberately or stolen.

Number of incidents

Incident type	Oct to Dec 2009	Oct to Dec 2010	Last 12 months
Vandalism – object thrown at train incidents	44	14	75
Vandalism, other incidents	11	5	44
TOTAL	55	19	119

Vandalism – object thrown at train incidents

Object thrown at train	Oct to Dec 2009	Oct to Dec 2010	Last 12 months
Bottles	3	0	3
Rocks or stones	36	9	56
Unknown objects	2	5	12
Other	3	0	4
TOTAL	44	14	75

Fire incidents

Definition: Incidents where a fire either trackside by the rail corridor or on board a rail vehicle has occurred.

Type of object struck	Oct to Dec 2009	Oct to Dec 2010	Last 12 months
Trackside fire	17	4	24
Fire on board a rail vehicle	4	13	25
Total	21	17	49

Derailment incidents

Definition: Incidents where a train or rail vehicle has derailed while moving along a rail track. The type of rail vehicle that derailed is identified as best as possible from rail incident reports. Note: Many of these derailments occur in rail yards during loading and shunting operations.

Derailments by type of rail vehicle (including bogies)

Type of rail vehicle	Oct to Dec 2009		Oct to Dec 2010		Last 12 months	
	On mainline	In yard	On mainline	In yard	On mainline	In yard
Hi Rail vehicle	0	2	0	1	0	5
Lead Bogie	6	15	0	4	5	24
Locomotive	1	13	0	19	4	49
Shunt	0	16	0	10	0	34
Trailing Bogie	2	12	1	5	6	25
Wagon	2	19	1	43	10	126
Other	0	0	0	0	0	0
TOTAL	11	77	2	83	25	263

Note: A Hi rail vehicle is a general purpose rail capable truck, utility, car, bus or van, used to transport people, equipment or materials to a site, or to carry out on-rail tasks such as inspection, grease dispensing, weed spraying, drain cleaning etc. For more detail, please go to <http://www.kiwirail.co.nz/glossary-of-terms.html>

Operating incidents

Definition: Incidents that occur during the course of rail operations in motion but excludes those categorised as derailments, collisions or shunting incidents.

Operating incident by incident type

Incident type	Oct to Dec 2009	Oct to Dec 2010	Last 12 months
Illegal passenger on train incidents	2	3	14
Infrastructure incidents	25	58	158
Insecure load incidents	4	5	16
Level crossing alarm failure incidents	1	2	10
Near collision incidents	0	0	5
Rolling stock incidents	0	3	10
SPAD related incidents	12	18	70
Track warrant irregularity incidents	0	2	12
Track occupancy irregularity incidents	9	7	54
Other incidents	25	27	149
TOTAL	78	125	498

Note: SPAD = Signals passed at danger.

Time series casualty data

Deaths and reported injuries for motor vehicle crashes at a level crossing in the Crash Analysis System (CAS)

		Year										
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle level crossing casualties	Deaths	4	4	6	3	8	4	2	5	1	4	0
	Injuries	15	18	11	17	18	22	7	19	13	14	n/a

Note: The number of level crossing deaths in the Crash Analysis System may be lower than the number in the Rail Incident Database as the Crash Analysis System includes only official road deaths. Deaths determined by the coroner to be a result of medical events or suicide are not included as official road deaths. Reported injury numbers may differ between the two systems. The Crash Analysis System includes road crashes attended and reported by Police.

Deaths and reported injuries for grouped rail incident types in the Rail Incident Database

		Year										
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle level crossing casualties	Deaths	6	4	8	4	7	5	2	6	3	4	0
	Injuries	17	39	14	10	16	18	6	14	8	8	9
Pedestrian level crossing casualties	Deaths	1	1	2	2	4	3	2	1	1	0	1
	Injuries	1	0	0	1	0	0	0	0	2	0	0
Pedal cyclist level crossing casualties	Deaths	0	0	0	0	0	0	0	0	0	0	0
	Injuries	0	0	1	1	1	0	0	0	0	0	1
Person on track casualties	Deaths	17	11	10	14	5	9	14	3	7	7	9
	Injuries	3	5	7	8	1	1	8	7	4	3	1
Other casualties - Members of the public	Deaths	2	0	0	1	0	0	0	0	2	1	0
	Injuries	20	13	18	24	22	14	22	1	4	13	24
Other casualties - Rail employees	Deaths	3	0	2	0	0	0	0	1	0	0	0
	Injuries	11	13	13	31	14	19	17	11	12	10	13
All rail incident deaths and injuries	Deaths	29	16	22	21	16	17	18	11	13	12	10
	Injuries	52	70	53	75	54	52	53	33	30	34	48

Statistics prepared by the Research and Statistics, Ministry of Transport. Enquiries regarding these statistics may be directed to Research and Statistics, Ministry of Transport, PO Box 3175, Wellington or by email on info@transport.govt.nz.

For further information on crash statistics see *Motor Vehicle Crashes in New Zealand*, the annual statistical statement produced by the Ministry of Transport. This publication is available in secondary school libraries and many public libraries and online at <http://www.transport.govt.nz/>